

CLEAN WATER ACTION
PLAN

UNIFIED WATERSHED
ASSESSMENT

NEW MEXICO

September 1998

Executive Summary

This Unified Watershed Assessment (UWA) draft was prepared by the New Mexico Environment Department (NMED) in conjunction with the Natural Resource Conservation Service (NRCS) as a result of two meetings of a statewide focus group representing federal agencies, state agencies, local governments, tribes and pueblos, soil and water conservation districts, environmental organizations, industry representatives, and the public. Public participation activities included news releases as well as several public review meetings scheduled throughout the state. Public meetings were held on the following dates and locations:

September 10, 1998 in Truth or Consequences

September 14, 1998 in Santa Fe

September 17, 1998 in Cuba

September 24, 1998 in Roswell

September 28, 1998 in Las Vegas

Several written and public comments were submitted and are addressed in this final document (Review of Public Comments, page 23). The comments were separated into four categories for discussion and response: Funding, Data, Participation, and Clarifications to the Draft UWA document.

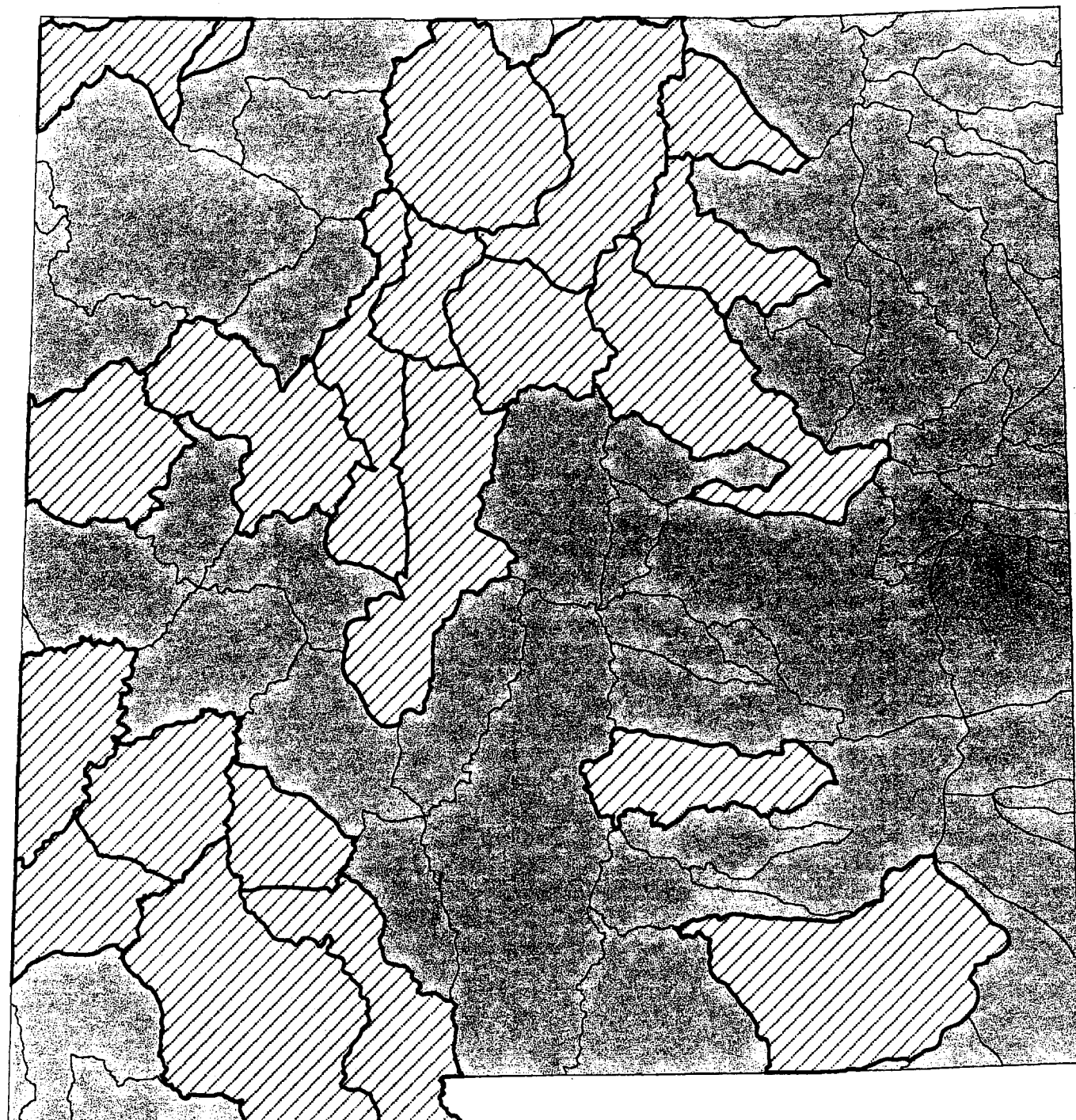
Data provided for this assessment include surface water reaches in New Mexico listed on the 303(d) list as requiring the development of TMDLs, NRCS Geographic Priority Areas, Land Ownership Status, and USGS water quality monitoring stations. Many agencies and entities were unable to provide data in the time frame given to develop this assessment. One of the unanimous conclusions of the UWA meeting participants was that there was insufficient data to develop a comprehensive and valid watershed assessment for New Mexico. Accumulated data were analyzed by the participants in the focus groups. The 83 watersheds in the state of New Mexico were assigned to one of the four broad assessment categories provided by the *Final Framework for Unified Watershed Assessment, Restoration Priorities, and Restoration Action Strategies, June 9, 1998*. Results of these assignments are shown on the accompanying map and include:





- 21 watersheds in Category 1: Watersheds in Need of Restoration
- 0 watersheds in Category 2: Watersheds Meeting Goals, Including Those Needing Action to Sustain Water Quality
- 0 watersheds in Category 3: Watershed with Pristine/Sensitive Aquatic System Conditions on Lands Administered by Federal, State, or Tribal Governments
- 62 watersheds in Category 4: Watersheds with Insufficient Data to Make an Assessment

The following document details the development and results of the UWA process in the state of New Mexico. These assessments of water quality and watershed conditions provide an efficient and accountable basis for linking state, tribal, and federal programs with common objectives. The New Mexico UWA is a dynamic document that will be continuously updated and improved as more data and public input is provided.

Watershed Assessment Categories for New Mexico

Unified Watershed Assessment



-  **Category 1. Watersheds in Need of Restoration (21)**
-  **Category 2. Watersheds Meeting Goals (0)**
-  **Category 3. Watersheds with Pristine/Sensitive Aquatic System Conditions (0)**
-  **Category 4. Watersheds with Insufficient Data to make an Assessment (62)**



0 60 Miles



CLEAN WATER ACTION PLAN UNIFIED WATERSHED ASSESSMENT - NEW MEXICO

The Clean Water Action Plan (CWAP) provides an opportunity to help meet the goals of the Clean Water Act through the development and application of a cooperative effort designed to identify and prioritize watersheds with water quality issues in New Mexico. Following this, strategies will be developed to restore and protect water quality within these watersheds.

In the *Final Framework for Unified Watershed Assessment, Restoration Priorities, and Restoration Action Strategies, June 9, 1998*, three actions are discussed to define further the states' implementation of the CWAP. These three actions are:

- 1.) Unified Watershed Assessments**
- 2.) Watershed Restoration Priority Setting**
- 3.) Watershed Restoration Action Strategies**

To address the directions and goals of the Clean Water Action Plan, the New Mexico Environment Department (NMED), Surface Water Quality Bureau (SWQB) and the New Mexico office of the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) joined together to begin the process of initiating the effort envisioned by the CWAP. The approach chosen was a cooperative method of addressing these three actions for New Mexico that will allow coordination across jurisdictional boundaries.

This Unified Watershed Assessment (UWA) draft document includes as appendices copies of the various original documents as a means of providing a complete record of the development and realization of the process used in New Mexico.

It is important to point out two aspects which are emphasized by the CWAP - UWA: the need to recognize and use in a coordinated fashion existing structures and efforts directed toward addressing surface water quality issues as well as broader natural resource issues, and the recommendation of utilizing existing data of adequate quality. The fact that there is a fairly significant amount of natural resource and water quality data currently held by various governmental agencies and other organizations is an important starting point. However, this data is in disparate locations, and any attempt at synthesis in order to support a decision is problematic. This fact, coupled with the emphasis that the UWA project places on mapping of surface water quality conditions, provides an opportunity to address a significant problem with respect to water quality data. Most information relevant to watershed management in New Mexico is not organized or integrated in a useful way. Much of the available mapped data has been drafted manually at different scales and dates or in different projections. Comparing different maps or updating them is a cumbersome process. Tabular data often lacks good geographic location data. Information collected by various agencies about those water resources

of concern usually lacks common identifying features, such as identification numbers that would allow them to be cross-referenced, aggregated, or linked to a more comprehensive tabular database. The UWA Geographic Information System (GIS) effort will overcome these problems by providing efficient data handling and display capabilities that facilitate the analysis of large amounts of spatially-referenced environmental data. All available data will be registered to real-world coordinates and projected into one projection. This will allow the overlaying of mapped data layers, determination of distances from fixed points, automatic changing of map scales, preparation of maps from tabular data, and the ability to perform spatial queries and environmental modeling.

1.) Unified Watershed Assessments

The determination was made that the most effective method of involving as many interested parties as possible within the state to assist in developing the first draft of the UWA would be to utilize existing committees rather than seeking to generate a completely new effort. This approach is recognized in the CWAP as being a more efficient use of limited time and budget resources. Accordingly, the mailing lists of the New Mexico SWQB Nonpoint Source (NPS) Task Force, the USDA NRCS FAC Water Quality Subcommittee, and the USDA NRCS State Technical Committee were combined. This more extensive mailing list includes federal agencies, state agencies, local governments, tribes and pueblos, soil and water conservation districts, environmental groups, industry representatives, etc. (Appendix 1).

Another part of this strategy was to combine previously scheduled meetings of June 16-17 of both the SWQB NPS Task Force and the USDA NRCS FAC Water Quality Subcommittee as an effective way to easily involve as many participants as possible. A letter of invitation and meeting agenda were mailed on May 22, 1998 to all parties on the combined list notifying them of this change in the June 16 -17 meetings, and explaining the new focus of the meeting, which was to introduce the CWAP - UWA. These documents are included in Appendix 2 of this draft.

The purpose of the June 16-17 meeting was to:

- 1.) provide an introductory overview of the CWAP and UWA;
- 2.) stress the objective of utilizing a collaborative effort to develop the assessment so that all data and interests within the state are included;
- 3.) get input from participants on how to best address this process;
- 4.) begin the process of gathering all available and applicable data on water quality and watershed assessments for New Mexico that participants could provide;
- 5.) Begin the UWA categorization and prioritization process.

A special effort was made to facilitate the integration and coordination of tribal and state processes. A special information mailing was provided to all Native American tribal heads and Natural Resource Department directors, as well as to all of the New Mexico tribal councils. Additional phone contacts and meetings were made with the All Indian Pueblo Council and Bureau of Indian Affairs representatives, who offered to make individual contacts with each tribal representative to discuss the Clean Water Action Plan and Unified Watershed Assessment to provide greater coordination.

MEETING OF JUNE 16-17

Approximately 50 of the 200 invitees participated in the meeting. Appendix 3 presents the sign-in sheets. Agencies/entities with representatives attending the meeting included:

- USEPA
- USDA NRCS
- USDA Forest Service
- US Fish and Wildlife Service
- US BLM
- Bureau of Indian Affairs
- US Geological Survey
- US Army Corp of Engineers
- NM Environment Department
- NM Department of Agriculture
- NM Cooperative Extension Service
- NM Water Resources Research Institute
- NM Division of State Forestry
- Local Soil and Water Conservation Districts
- Eastern Navajo
- Jicarilla Apache
- Pueblo of Acoma
- Taos Pueblo
- San Juan Pueblo
- NM Association of Conservation Districts
- NM Watershed Coalition
- NM Mining Association
- Middle Rio Grande Council of Governments
- NM Farm and Livestock Bureau
- NM Natural Heritage Program
- NM Municipal League

The format of the meeting was designed to provide an overview of the CWAP, and some discussion of the UWA approach. A presentation on the genesis and goals of the CWAP was

provided, along with a fairly detailed explanation of the purpose of the Unified Watershed Assessment approach. SWQB emphasized the usefulness of a "unified" approach to surface water quality issues in New Mexico given the checkerboard nature of land ownership status (private, federal, tribal and state) throughout the state, and the diverse data sources and quality available with which to support a water quality decision. Data available at this first meeting included surface water reaches in New Mexico listed on the SWQB 303(d) list as requiring the development of TMDLs, NRCS Geographic Priority Areas, Land Ownership Status, and USGS water quality monitoring stations.

These data were presented to the group as an example of the type of information available which would be used in the prioritization decision process necessary for the UWA. All data were entered in the SWQB GIS system (ARCINFO 7.0) and interactively displayed for the group. The purpose of demonstrating these data in a GIS format was to establish for the group the power and flexibility this approach offers for analysis of the various watersheds in New Mexico as additional data sets are included. These activities continued through the end of the day on June 16.

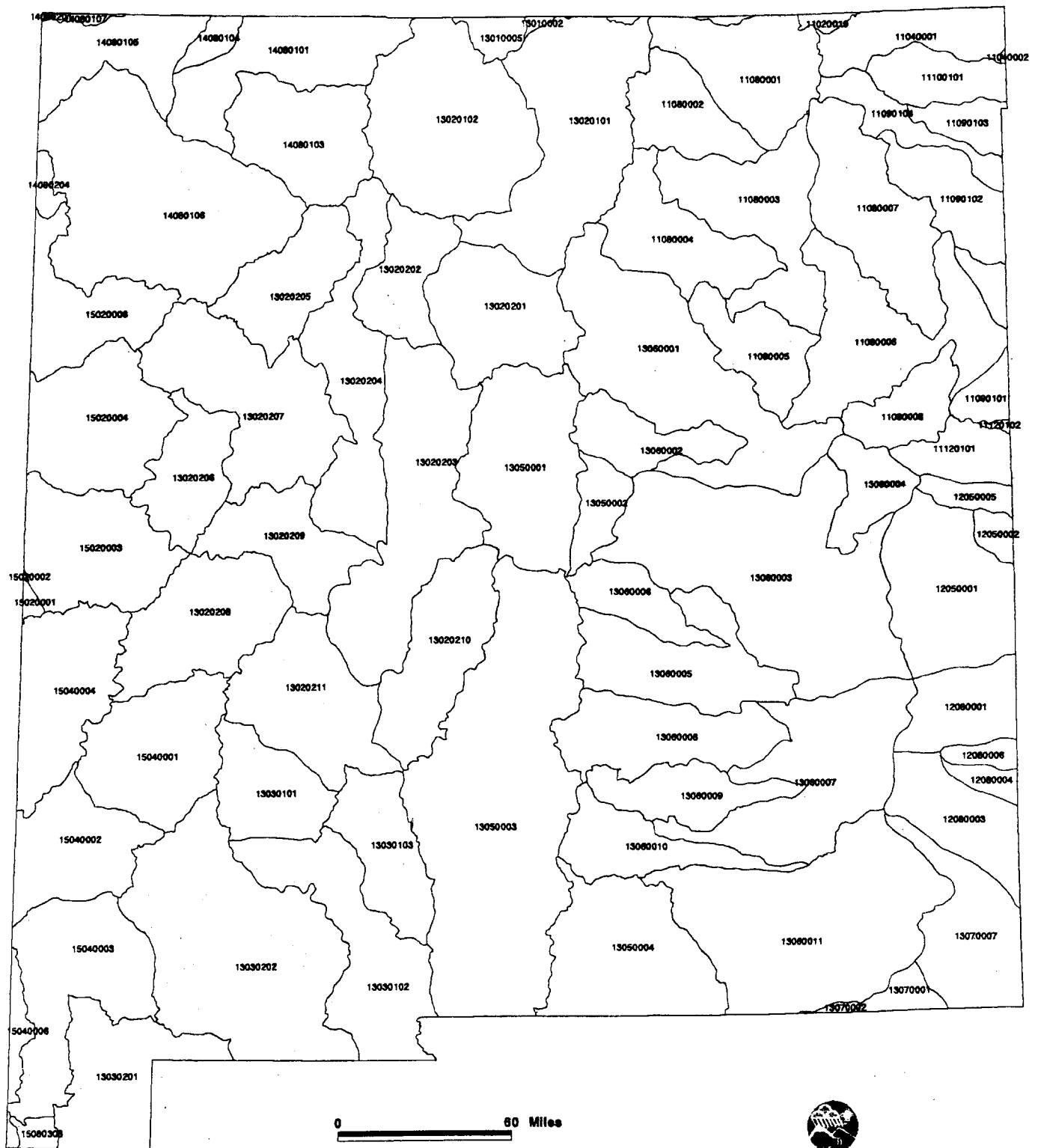
Beginning on the morning of June 17, the large group of attendees was broken into five subgroups to address a number of questions which had been developed by SWQB and NRCS prior to the meeting (Appendix 4). In the course of addressing these questions, the sub-groups were also asked to suggest a process by which to continue with the UWA. It was felt that these subgroup breakout sessions would provide an effective discussion forum and means of reaching consensus.

At various times during both days of the meeting, concerns about this effort were voiced by different individuals. Some of these concerns included the following:

- fears of top heavy government control
- the lack of valid data
- the limited time frame provided to develop the UWA

Throughout the meeting, SWQB and NRCS stressed that the purpose of this process was to include all interested and/or affected groups and individuals so that decisions are made by consensus, while at the same time being based on a sound scientific foundation. One of the goals of bringing this group together was to gather all of the available data that various agencies and entities have gathered over the years so as to strengthen the data base available on water quality and watershed conditions in New Mexico. With respect to the limited time frame, SWQB and NRCS felt that the progress made at the meeting, where interested and effected groups could exchange ideas and data would, in and of itself, provide a great value. Also, the point was made that the UWA is and must be a dynamic process; any priority assessments decided on at this early

Figure 1: 8 Digit Hydrologic Units



date would necessarily be re-evaluated, and the UWA will continuously be updated and improved as more data is provided.

Following acknowledgment of these valid concerns, the subgroups agreed to proceed with the development of a first draft of the UWA utilizing existing and available data. Appendix 5 shows a summary of the results of these subgroup discussions. A spokesperson from each subgroup reported to the large group, which allowed the large group to reach consensus on how to proceed. The first draft of the UWA would largely follow the guidance provided by the *Final Framework for Unified Watershed Assessment, Restoration Priorities, and Restoration Action Strategies, June 9, 1998*. The scale of analysis would utilize the USGS 8-digit system of watershed delineation (Figure 1). The various governmental agencies and interest groups which may have spatially referenced data relating to surface water quality would submit those data to SWQB, in both tabular and spatial formats no later than July 14. These submitted data would not be altered in any way, but would be integrated into and presented in GIS format. The SWQB requested that this data be in the form of shape files or "Arc/Info coverages" transmitted electronically to SWQB via appropriate file transfer protocols (ftp). All such received geospatial data sets were projected into geographic projection to allow overlay in ArcView 3.0. Within SWQB's GIS, these data sets were projected into State Plane 1927. This allowed these layers to be projected on a large screen for display during the actual prioritization meeting. The July 14 deadline for submission of additional data was necessary to allow SWQB to prepare for the next meeting, scheduled for July 29.

All data sources and tools which were submitted to SWQB were evaluated to determine their applicability. In part because of the short deadlines and turn around time data that was not submitted in an appropriate GIS format was not utilized. Additionally, the steps necessary to transfer the data to a GIS format are such that questions of data "ownership" may arise; accordingly, SWQB did not manipulate any of the submitted data in order to maintain the appropriate level of confidence in the data, and avoid questions of any possible changes. As the UWA process matures, and additional data sources are accessed, questions of data confidentiality and data quality will need to be resolved. One category of data that was particularly lacking was data indicating "pristine" surface water quality conditions.

After the June meeting, a letter dated June 25 was mailed to all entities on the mailing list providing a synopsis of the subgroup comments to questions, summarizing the decisions made by participants at the meeting, and requesting data by the July 14 deadline from both those in attendance and any other entities that were unable to attend the meeting (Appendix 5).

At the same time that the georeferenced data was submitted to SWQB, NRCS was working to develop a "data matrix" which would allow evaluation of tabular data. This matrix was designated the "UWA Prioritization Tally Sheet" (Appendix 6). Recognizing the complexity of this tally sheet, and the fact that there were additional data elements which could legitimately be added, a detailed data element explanation was included in order to explain the various data elements. A description of the UWA Categorization process was also provided to

explain how watersheds would be categorized. These various explanation sheets are included in Appendix 6 of this document. The entire contents of Appendix 6 constitute the mailing which was sent July 17 to the combined mailing list to allow participants to prepare for the July 29 meeting.

MEETING OF JULY 29

The second meeting of the CWAP group was held on July 29, 1998 in Albuquerque, N.M. Again, approximately 50 invitees attended. Along with the same agencies listed above as attending the first meeting (June 16-17) some additional agencies/entities were represented as follows:

- NM State Land Office
- Cochiti Pueblo
- Laguna Pueblo
- Pueblo of Isleta
- Pueblo of Jemez
- Pueblo of Sandia
- Pueblo of San Ildefonso
- Pueblo of Zuni
- Santa Clara Pueblo
- Additional Native American Tribes and Pueblos
- The Nature Conservancy

Appendix 7 presents the sign-in sheets for this second meeting. The meeting was opened with a review of the CWAP process and the potential for future funding. This was presented as an update for individuals who had not been able to attend the June meeting. The mailing referenced above and shown in Appendix 6 had requested that the meeting participants fill out the tally sheet data element matrix with any additional information they may have prior to coming to the meeting.

The tally sheet (Table 1) portraying all of the watershed information submitted to SWQB and incorporated into the GIS overlay mapping system was provided as a tool for the group's analysis of the various types of data. Each of the data elements was presented and described by the agency/entity providing the data. Appendix 6 of this report includes a "Data Elements for the UWA-Prioritization Tally Sheet" description. Figures 2 and 3 are maps of New Mexico showing examples of some of these data elements which were submitted to SWQB and incorporated into the GIS.

Each entity which had submitted data was asked to give a brief description of that data in order to provide an indication of the "data quality." In effect, this was a verbal description of the metadata; how, when and where the data were collected, and what level of confidence could be

New Mexico-Unified Watershed
Assessment-Prioritization Tally Sheet

New Mexico - Unified Watershed Assessment - Prioritization Tally Sheet

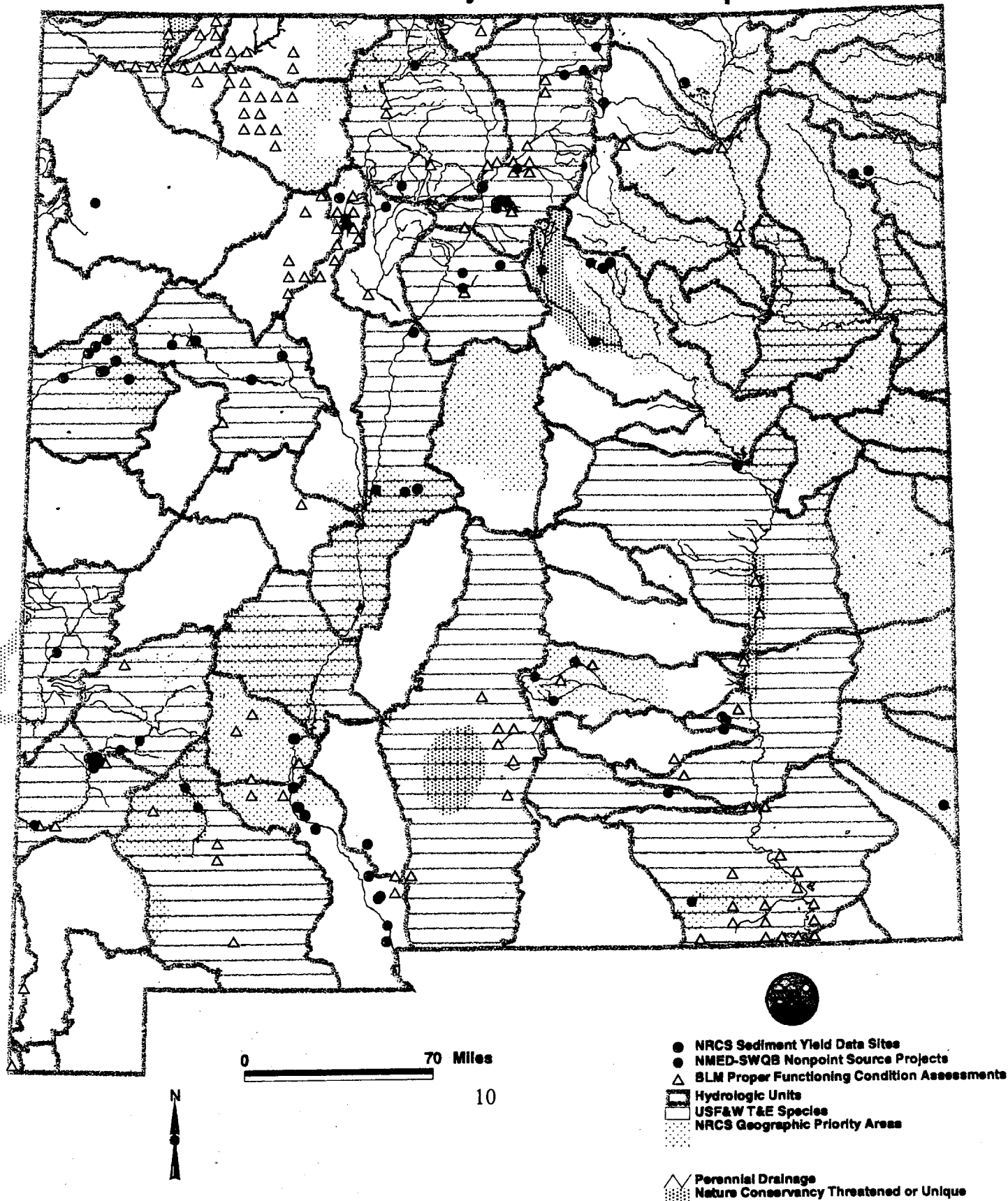
J A	USGS 8-digit Hydrologic Units	Area	TMDL Segment	No of Causes for Non-supp.	NPDES Permits	USFS GES	USFS BLM Unique	NPS Proj	BLM		GAP Analysis	USFWS Wetland	Priority Wtshd	USFWS NMG&F T&E	NMG&F NMSLO Unique	TNC	Wtshd Groups	USGS Sta	ACOE Sec 404 Permits	OSM Mined Land	USDA-NRCS			Category I, II, III, or IV	
									Proper Functioning Condition												Range Condition	GPA	Gross Erosion		Sed Yield
									PF Mi./Tot. Mi.	%															
Arkansas White-Red Region																									
	11020010 Purgatoire	125.0																	104			M			
	11040001 Cimarron Headwaters	997.0	88	6	0														7		Y	M			
3	11040002 Upper Cimarron	5.0																	3		Y	M			
	11080001 Canadian Headwaters	1,656.0	48	3	2														6	56		Y	M	1 H	
	11080002 Cimarron	1,065.0	153	8	0														8	70		Y	M	1 M	
6	11080003 Upper Canadian	2,048.0	23.1	1	0				0.5/2.5	20.0									2	17		Y	M		
7	11080004 Mora	1,483.0	149	5	1				0.0/1.5	0.0									5	64		Y	M		
	11080005 Conchas	1,029.0																	1	15		Y	MH		
9	11080006 Upper Canadian-Ute Res	2,375.0												1					2	18		Y	MH		
10	11080007 Ute	2,156.0																	1	5		Y	M		
	11080008 Revuelto	811.0																	1	2		Y	MH		
	11090101 Middle Canadian-Trujillo	517.0																		1		Y	M		
13	11090102 Punta de Agua	979.0							0.5/0.5	100.0									4			Y	M	2 M	
	11090103 Rita Blanca	404.0																	4			Y	M		
	11090104 Carrizo	626.0																				Y	M		
16	11100101 Upper Beaver	750.0																	3			Y	M		
	11120101 Tierra Blanca	631.0																	3			Y	M		
	11120102 Palo Duro	30.0																	0			Y	M		
Texas-Gulf Region																			0			Y	M		
19	12050001 Yellow House Draw	2,205.0																	25			Y	M		
	12050002 Blackwater Draw	181.0																	17			Y	M		
21	12050005 Running Water Draw	307.0																	5			Y	M		
22	12080001 Lost Draw	1,018.0																	0			Y	M		
	12080003 Monument-Sem. Draws	1,259.0																	9			Y	L		
	12080004 Mustang Draw	207.0																	1			Y	L	1 L	
25	12080006 Sulphur Springs Draw	200.0																	0			Y	L		
Rio Grande Region																									
	13010002 Alamosa-Franchera	46.0																	187				M		
27	13010005 Conejos	243.0	48	2	0				0.0/4.0	0.0									72				M		
29	13020101 Upper Rio Grande	3,109.0	234	10	6			4	79.8/104.9	76.1				2			2	32	675				M	7 VII	
	13020102 Rio Chama	3,075.0	343	8	2			2	10.6/15.7	67.1				1				5	423		Y	MH			
30	13020201 Rio Grande-Santa Fe	1,870.0	26	4	3			3	1.5/6.5	23.1				2			6	6	328				MH	1 L	
31	13020202 Jemez	1,043.0	133	7	3			1	0.0/4.6	0.0							1	3	80				MH		
	13020203 Rio Grande-Albuquerque	3,204.0	38	3	13			2						2				29	459		Y	M	1 MH		
	13020204 Rio Puerco	2,104.0	59	3	0			2	4.3/26.3	16.4								3	53		Y	MH	2 MH		
34	13020205 Arroyo Chico	1,389.0							0.6/23.3	2.8								1	6				MH		
	13020206 North Plains	1,146.0							0.1/0.1	100.0									1				M		
	13020207 Rio San Jose	2,632.0	60	5	0			1	1.9/1.9	100.0				1				4	49				M	2 L	
37	13020208 Plains of San Agustin	1,976.0																					M		
	13020209 Rio Salado	1,406.0							0.0/17.0	0.0									3				M		
	13020210 Jornada del Muerto	2,021.0																	9		Y	MH			
	13020211 Elephant Butte Res	1,891.0	12.2	1	0														2				M		
40	13030101 Caballo	1,240.0	11	1	0				1.8/3.1	59.3				2			Y	1	35		Y	MH			
41	13030102 El Paso-Las Cruces	2,405.0	23	2	5			1	2.5/3.6	68.5								1	79		Y	M	2 H		

New Mexico - Unified Watershed Assessment - Prioritization Tally Sheet

UWA #	USGS 8-digit Hydrologic Units	Area Sq. Mi.	TMDL Segment Mi.	No of Causes for Non-supp No.	NPDES Permits No.	USFS GES	USFS BLM Unique Ac.	NPS Proj No.	BLM			USFWS Wetland Ac.	Priority Wetland	USFWS NMG&F T&E No.	NMG&F Unique Ac.	TNC Y No	Wetland Groups No	USGS Sta. No.	ACOE Sec 404 Permits No.	OSM Mined Land Acres	USDA-NRCS			Category I, II, III, or IV
									Proper Functioning Condition PF Mi./Tot. Mi.	Range Condition %	GAP Analysis ?										GPA	Gross Erosion L, M, MH, H, VH	Sed Yield H, VH	
43	13030103 Jornada Draw	1,304.0																						
44	13030201 Plovas Lake	1,647.0							0.0/0.4	0.0									4			MH		
45	13030202 Mimbres	4,477.0	25	3	0			2	2.5/2.9	86.2				2		Y	1	1	94		Y	M		
Central Closed Basins																								
46	13050001 Western Estancia	2,236.0																	25		Y	M		
47	13050002 Eastern Estancia	520.0																	0			M		
48	13050003 Tularosa Valley	6,796.0	8	2	0				0.3/9.2	3.3				1		Y	1	2	123			MH		
49	13050004 Salt Basin	2,352.0																	61			M		
Pecos River Basin																								
50	13060001 Pecos Headwaters	4,276.0	277	6	6			4								Y	1	14	213		Y	MH	2 H	
51	13060002 Pintada Arroyo	868.0																	2			MH		
52	13060003 Upper Pecos	4,837.0							0.0/3.8	0.0				1		Y		1	17		Y	M	1 MH	
53	13060004 Taiban	722.0																	6		Y	M		
54	13060005 Arroyo Del Macho	1,874.0																	7			M		
55	13060006 Gallo Arroyo	736.0																	0			M		
56	13060007 U. Pecos-Long Arroyo	2,633.0							0.0/19.5	0.0				5		Y		4	41			M	3 L	
57	13060008 Rio Hondo	1,682.0	72	4	2			2	4.5/6.8	66.2						Y	2	5	166		Y	MH	1 M	
58	13060009 Rio Felix	1,002.0							0.0/1.0	0.0									20			M		
59	13060010 Rio Penasco	1,127.0	43	1	1			1						1		Y			16			M		
60	13060011 Upper Pecos-Black	4,286.0	40	3	1			1	3.5/36.6	9.6				5		Y		10	46		Y	L		
61	13070001 L. Pecos-Red Bluff Res	302.0	4.5	1	0				0.4/0.4	100.0									18			L		
62	13070002 Delaware	42.0							0.8/10.0	7.5								1	36			M		
63	13070007 Landreth-Mon Draws	1,538.0																	24			L		
Upper Colorado Region																								
64	14080101 Upper San Juan	1,825.0	37	3	3				2.0/23.9	8.4								1	224		Y	MH		
65	14080103 Blanco Canyon	1,708.0							0.0/76.3	0.6									40		Y	MH		
66	14080104 Animas	229.0	37	1	4				1.0/6.7	14.9								1	121			MH		
67	14080105 Middle San Juan	1,187.0	56	2	9				0.5/6.3	7.6				3		Y	1	4	103			MH		
68	14080106 Chaco	4,593.0						1											2	45		MH		
69	14080107 Mancos	60.0																	0			Unknown		
70	14080201 L. San Juan-4 Corners	9.0																	0			Unknown		
71	14080204 Chinle	126.0																	8			Unknown		
Lower Colorado Region																								
72	15020001 Little Colo. Headwaters	60.0																	3			MH		
73	15020002 Upper Little Colorado	8.0																	0			M		
74	15020003 Carrizo Wash	1,885.0																	15			M		
75	15020004 Zuni	2,029.0	22.8	1	0									1		Y		3	30		Y	M	8 M	
76	15020006 Upper Puerco	1,341.0																	2	67		MH		
77	15040001 Upper Gila	1,993.0	80	6	1			2	0.6/0.6	100.0				4		Y		2	38			MH	10 H	
78	15040002 Upper Gila-Mangas	1,527.0	60	2	0			1	6.5/11.1	58.6				4		Y	2	1	77			MH		
79	15040003 Animas Valley	2,183.0																	27			M		
80	15040004 San Francisco	1,850.0	74	7	0			1						1		Y		4	71			MH		
81	15040006 San Simon	229.0							0.4/0.4	100.0									2			L		
82	15080302 San Bernardino Valley	36.0							0.0/1.0	0.0									0			L		
83	15080303 Cloverdale	142.0																	0			M		

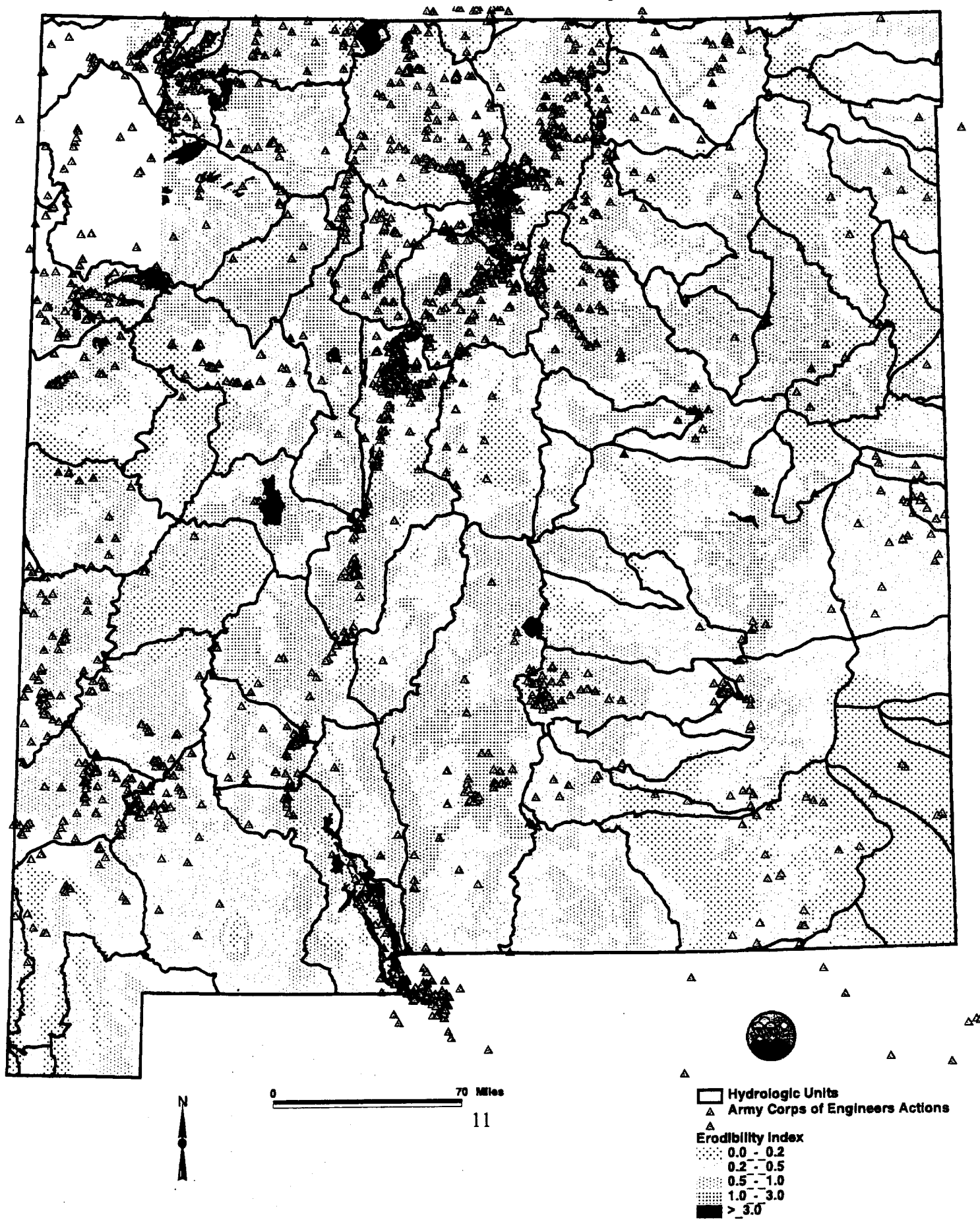
UWA

**Figure 2: USF&W T&E Species
NRCS Sediment Yield
NMED-SWQB Nonpoint Source Projects
BLM Proper Functioning Condition Assessments
NRCS Geographic Priority Areas
Nature Conservancy Threatened / Unique**



UWA

**Figure 3: Army Corps of Engineers Actions
NRCS Soil Erodibility**



placed in the data. It was felt by the group that this was necessary in order to begin to make informed decisions concerning the unified watershed assessment process in New Mexico.

As during the first meeting of June 16-17, there were various concerns raised regarding the appropriateness and validity of the different data elements. Vigorous discussion concerning these issues ensued. Some participants indicated that caution should be used when interpreting the various agency data which had been submitted, since each agency/interest group may have different data quality objectives, and utilize various levels of data quality control. This caution was appreciated by all at the meeting, and subsequent decisions concerning the weight to give to any particular data element was made in this context.

Neither SWQB nor NRCS provided any specific guidelines to the group concerning how they should make the "data value" judgements. The intent was to allow the participants to reach a decision as independently as possible.

Following this metadata discussion the meeting participants were divided into six sub-groups to analyze the data and come to consensus in assigning the 83 watersheds to categories based on the four broad assessment categories provided in the *Final Framework for the Unified Watershed Assessment, Restoration Priorities, and Restoration Action Strategies*.

Category I.) Watersheds in Need of Restoration - watersheds do not now meet, or face imminent threat of not meeting, clean water and other natural resource goals.

Category II.) Watersheds Meeting Goals, Including Those Needing Action to Sustain Water Quality - watersheds meet clean water and other natural resource goals and standards and support healthy aquatic systems. All such watersheds need the continuing implementation of core clean water and natural resource programs to maintain water quality and conserve natural resources.

Category III.) Watersheds with Pristine/Sensitive Aquatic System Conditions on Lands Administered by Federal, State, or Tribal Governments - States/tribes work cooperatively with federal land managers to identify watersheds with exceptionally pristine water quality, drinking water sources, or other sensitive aquatic system conditions.

Category IV.) Watersheds with Insufficient Data to Make an Assessment - watersheds lack data, critical data elements, or the data density needed to make a reasonable assessment.

The groups were given over 2 hours in which to divide the 83 watersheds into the four categories. Following this time, the six sub-groups reported back to the whole group. Again, there were several issues raised concerning the difficulty in making determinations based on the data provided. Although some of the data was based on empirical observations which followed

appropriate methodology and was therefore considered reliable, other data elements were considered to be anecdotal, and therefore not valid. These concerns and suggestions are summarized for each subgroup in Appendix 8. Some meeting participants felt that people living in the watersheds would have the best information of the conditions of the watershed. Other participants had a difficult time in rating the various data elements since the different data collection methodologies made comparison problematic. In general, it was believed that there was a need for more data in order to make sound decisions. The six groups, nevertheless, all chose to categorize the watersheds to the best of their abilities regardless of the deficiencies in the data. Although the state focus group categorized all watersheds, those that contain tribal land are subject to tribal decisions.

The dynamic nature of GIS was a tremendous advantage during the prioritization meeting. This will continue as the other GIS data sets are received. During the meeting, specific GIS spatial analysis, such as point in polygon or polygon in polygon queries, were performed as requested by particular groups. Besides these spatial queries, the Arc/Info attribute tables were also queried to provide additional information such as sediment yield at a particular site or the percent of proper functioning condition for a particular section of stream. The CWAP GIS database will continue to be maintained and integrated with other relevant geodata sets in New Mexico as this process continues

After each of the six groups presented their decisions and the reasoning behind the decisions to the entire group, a summary of the sub-group watershed category assignments was developed (Table 2). It was decided by all meeting participants that Category I watersheds would encompass those watersheds that had been chosen by at least 5 of the sub-groups as Category I. This resulted in eighteen Category I watersheds being identified (Table 3).

In addition to these eighteen Category I watersheds, NMED SWQB has determined that three additional watersheds will be added to Category I. This determination was made because the three watersheds are drinking water source watersheds and/or contain a relatively high number of TMDL segment miles. They are:

- 1.) Cimarron (HUC 11080001), 7 drinking water systems, 153 TMDL miles
- 2.) Jemez (HUC 13020202), 2 drinking water systems, 133 TMDL miles
- 3.) Mora (HUC 11080004), 0 drinking water systems, 149 TMDL miles.

Appendix 9 contains a table which cross-references individual segments as presented in the State of New Mexico §303(d) List for Assessed Stream and River Reaches with USGS HUC codes.

2.) Watershed Restoration Priorities

In order to further prioritize the twenty-one Category I watersheds in New Mexico for restoration and protection efforts, the watersheds were evaluated for the presence of drinking water supply systems dependent on surface waters and for TMDL development schedule dates as

Table 2

**Summary of Watershed Categories
from the**

Unified Watershed Assessment - Prioritization Tally Sheet

Hydrologic Unit (8-digit)	Summary of Small Group (Breakout) Sessions Watershed Category				Draft Category Consensus at July 29 meeting	Draft Priority for Category I's
	I	II	III	IV		
1	1			2,4,3,5,6		
2	1,4,3,5,6			2		
3	1			2,4,3,5,6		
4	2,1,3,5,6		4			
5	1,3,5,6,4			4		
6	1,3,5,6	4		2		
7	1,4,3,5,6			2		
8	1			2,4,3,5,6		
9	1,5	2,3		4,6		
10	1			2,4,3,5,6		
11	1			2,4,3,5,6		
12	1			2,4,3,5,6		
13	1			2,4,3,5,6		
14	1			2,4,3,5,6		
15	1			2,4,3,5,6		
16	1			2,4,3,5,6		
17	1			2,4,3,5,6		
18	1			2,4,3,5,6		
19	1			2,4,3,5,6		
20	1			2,4,3,5,6		
21	1			2,4,3,5,6		
22	1			2,4,3,5,6		
23	1			2,4,3,5,6		
24	1			2,4,3,5,6		
25	1			2,4,3,5,6		
26	1	2	4	3,5,6		
27	1,4,3,5,6			2,4		
28	1,2,4,3,5,6		4			
29	2,1,4,3,5,6		4			
30	2,1,4,3,5,6		4			
31	1,4,3,5,6	2	4			
32	2,1,4,3,5,6					
33	2,1,4,3,5,6					
34	1,4,3,5			2,6		
35	1			2,4,3,5,6		
36	2,1,4,3,5,6					
37	1	2		4,3,5,6		
38	2,1,4,5	3		4,6		
39	1			2,4,3,5,6		
40	1,4,3,5,6			2		
41	2,1,4,3,5,6					
42	2,1,4,3,5,6					
43	1		2	4,3,5,6		
44	1	2		4,3,5,6		

Table 2

**Summary of Watershed Categories
from the**

Unified Watershed Assessment - Prioritization Tally Sheet

Hydrologic Unit (8-digit)	Summary of Small Group (Breakout) Sessions Watershed Category				Draft Category Consensus at July 29 meeting	Draft Priority for Category I's
	I	II	III	IV		
45	2,1,4,3,5,6					
46	1	3		4,5,6,2		
47	1			4,3,5,6,2		
48	1,4,3,5,6		2			
49	1			4,3,5,6,2		
50	1,4,3,5,6,2		4			
51	1			4,3,5,6,2		
52	1,4,5	3		4,6,2		
53	1	4		4,3,5,6,2		
54	1			4,3,5,6,2		
55	1			4,3,5,6,2		
56	1,4,5,2	3		6		
57	1,4,3,5,6,2					
58	1,4		4	4,3,5,6,2		
59	1,4,3,5,6		2			
60	1,4,3,5,6,2					
61	1,3,5,6,2			4		
62	1,5,2			4,3,6		
63	1			4,3,5,6,2		
64	1,4,3,5,6	2	4			
65	1,4,3,5	2	4,2	6		
66	1,4,3,5,6,2					
67	1,4,3,5,6,2			2		
68	1,4			4,3,5,6,2		
69	1			4,3,5,6,2		
70	1			4,3,5,6,2		
71	1			4,3,5,6,2		
72	1			4,3,5,6,2		
73	1			4,3,5,6,2		
74	1,4			3,5,6,2		
75	1,4,3,5,6,2					
76	1,4	3		5,6,2		
77	1,4,3,5,6,2		4		I	
78	1,4,3,5,6,2		4			
79	1,2			4,3,5,6		
80	1,4,3,5,6,2		4			
81	1	3		4,5,6,2		
82	1			4,3,5,6,2		
83	1	2		4,3,5,6		

Table 3: Category 1 Watersheds

UWA #	USGS 8-digit Hydrologic Units	Area	TMDL Segment	No of Causes for Non-supp	NPDES Permits	USFS GES	USFS BLM Uniqu	NPS Proj	BLM			GAP Analysis	USFWS		USFWS NMG&F T&E	NMG&F NMSLO Unique	TNC	Wtshd Groups	USGS Sta	ACOE Sec 404 Permits	OSM Mined Land Acres	USDA-NRCS		
									Proper Functioning Condition	Range Condition	Wetland		Priority Wtshd	GPA								Gross Erosion	Sed Yield	
																								PF Mi /Tot. Mi.
		Sq. Mi	Mi	No.	No.		Ac	No.				Ac		No.	Ac	Y	No.	No.	No.		Y/N			
28	13020101 Upper Rio Grande	3,109.0	234	10	6			4	79.8 / 104.9	76.1				2			2	32	675			M	7 VH	
29	13020102 Rio Chama	3,075.0	343	8	2			2	10.6 / 15.7	67.1				1				5	423		Y	MH		
30	13020201 Rio Grande-Santa Fe	1,870.0	26	4	3			3	15 / 6.5	23.1				2			6	6	328			MH	1 L	
32	13020203 Rio Grande-Albuquerque	3,204.0	38	3	13			2						2				29	459		Y	M	1 MH	
33	13020204 Rio Puerco	2,104.0	59	3	0			2	4.3 / 26.3	16.4								3	53		Y	MH	2 MH	
36	13020207 Rio San Jose	2,632.0	60	5	0			1	19 / 1.9	100.0				1				4	49			M	2 L	
41	13030101 Caballo	1,240.0	11	1	0				1.8 / 3.1	59.3						Y	1	1	79		Y	M	2 H	
42	13030102 El Paso-Las Cruces	2,405.0	23	2	5			1	2.5 / 3.6	68.5							1		191		Y	MH	11 MH	
45	13030202 Mimbres	4,477.0	25	3	0			2	2.5 / 2.9	86.2				2			Y	1	1	94		Y	M	
50	13060001 Pecos Headwaters	4,276.0	277	6	6			4								Y	1	14	213		Y	MH	2 H	
57	13060008 Rio Hondo	1,682.0	72	4	2			2	4.5 / 6.8	66.2						Y	2	5	166		Y	MH	1 M	
60	13060011 Upper Pecos-Black	4,286.0	40	3	1			1	3.5 / 36.6	9.6				5		Y		10	46		Y	L		
66	14080104 Animas	229.0	37	1	4				10 / 6.7	14.9							1	1	121			MH		
67	14080105 Middle San Juan	1,187.0	56	2	9				0.5 / 6.3	7.6				3		Y		4	103			MH		
75	15020004 Zuni	2,029.0	22.8	1	0									1		Y		3	30		Y	M	8 M	
77	15040001 Upper Gila	1,993.0	80	6	1			2	0.6 / 0.6	100.0				4		Y		2	38			MH	10 H	
78	15040002 Upper Gila-Mangas	1,527.0	60	2	0			1	6.5 / 11.1	58.6				4		Y	2	1	77			MH		
80	15040004 San Francisco	1,850.0	74	7	0			1						1		Y		4	71			MH		

5	11080002 Cimarron	1,065.0	153	8	0													8	70		Y	M	1 M
7	11080004 Mora	1,483.0	149	5	1				0.0 / 1.5	0.0								5	64		Y	M	
31	13020202 Jemez	1,043.0	133	7	3			1	0.0 / 4.6	0.0							1	3	80			MH	

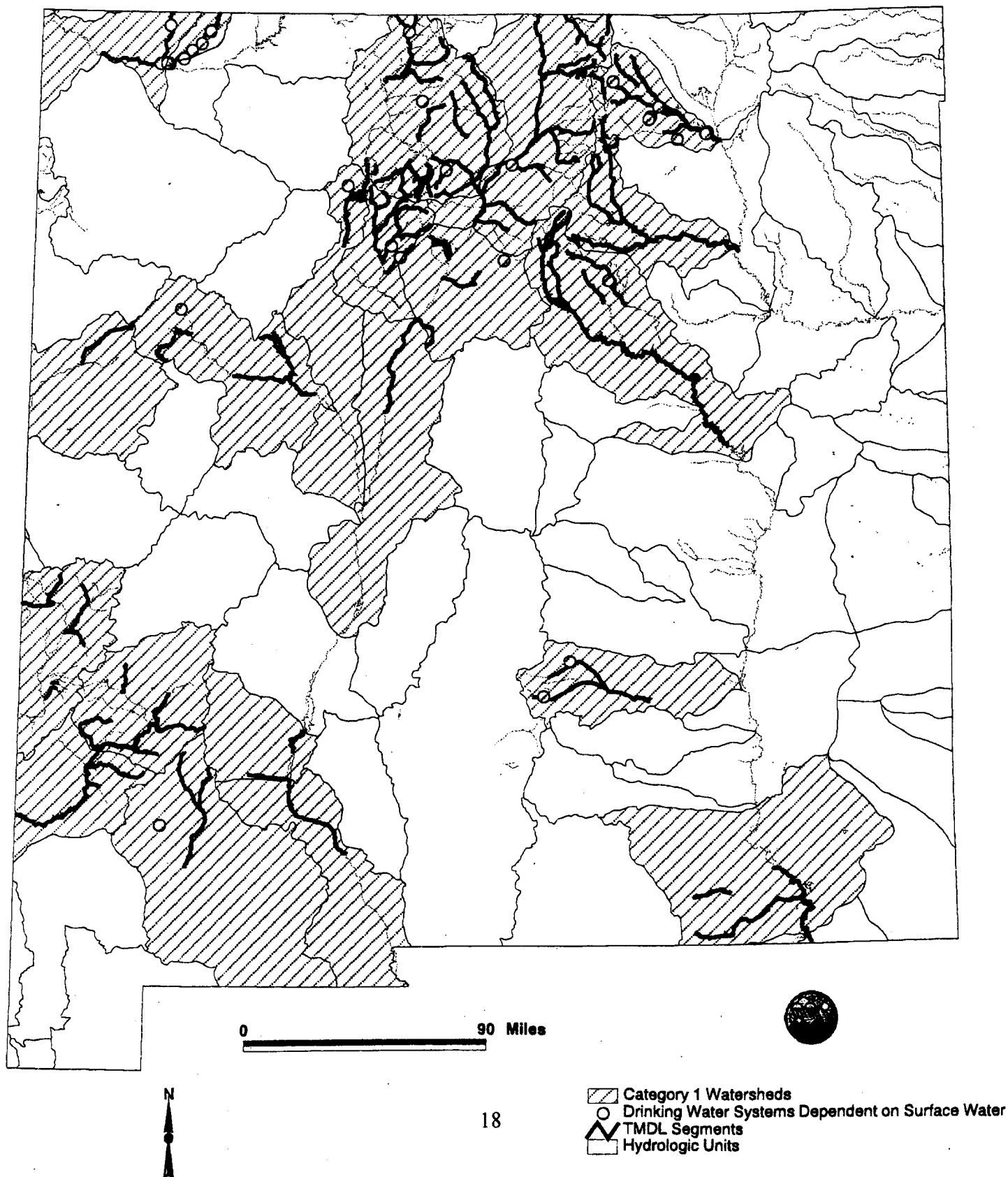
Table 4

WATERSHED RESTORATION PRIORITIES

UWA	UNIT	NAME	Area sq.mi	TMDL segment miles	TMDL Schedule	non- support	Surface water- supply	No. of systems
29	13020102	Rio Chama	3,075	343	1999	8	yes	3
50	13010001	Pecos Headwaters	4,276	277	1999	6	yes	1
5	11080002	Cimarron	1,065	153	1999	8	yes	7
31	13020202	Jemez	1,043	133	1999	7	yes	2
30	13020201	Rio Grande-Santa Fe	1,870	26	1999	4	yes	1
67	14080105	Middle San Juan	1,187	56	2004	2	yes	2
66	14080104	Animas	229	37	2004	1	yes	6
33	13020204	Rio Puerco	2,104	59	2006	3	yes	1
57	13060008	Rio Hondo	1,682	72	2013	4	yes	2
28	13020101	Upper Rio Grande	3,109	234	2017	10	yes	1
36	13020207	Rio San Jose	2,632	60	2017	5	yes	1
45	13030202	Mimbres	4,477	25	2017	3	yes	1
42	13030102	El Paso-Las Cruces	2,405	23	1998	2	no	0
41	13030101	Caballo	1,240	11	1998	1	no	0
7	11080004	Mora	1,483	149	1999	5	no	0
32	13020203	Rio Grande-Albuquerque	3,204	38	2000	3	no	0
77	15040001	Upper Gila	1,993	80	2001	6	no	0
80	15040004	San Francisco	1,850	74	2001	7	no	0
78	15040002	Upper Gila-Mangas	1,527	60	2001	2	no	0
75	15020004	Zuni	2,029	22.8	2017	1	no	0
60	13060011	Upper Pecos-Black	4,286	40	2017	3	no	0

UWA

**Figure 4: Priority Cat. 1 Watersheds
with Drinking Water Supply Systems
Dependent on Surface Water
TMDLs within Cat. 1 Watersheds**



required in the USEPA - Forest Guardians consent decree.

Following this secondary prioritization scheme, the highest priorities within Category I are those watersheds containing drinking water supply systems dependent on surface waters. Within those watersheds, the priority ranking is then based upon the mandatory schedule for TMDL development. In instances where the TMDL development schedule is the same for watersheds, a further ranking was based on the number of TMDL miles within each watershed. Those watersheds without drinking water systems dependent on surface waters are also prioritized according to the TMDL development schedule as shown in Table 4. Figure 4 shows the 21 Category I watersheds with TMDL segments that occur within the watersheds, and drinking water systems dependent on surface waters.

Any prioritization scheme will necessarily make compromises. This draft is the best estimate at this time to resolve these trade-offs. It is recognized that other prioritization schemes may be more important in the future as the UWA process matures.

As a follow up to the meetings described in this report, SWQB and NRCS will be traveling throughout New Mexico providing presentations on the CWAP and the development process of the UWA categorization and prioritization of problem watersheds. These presentations have been provided to the quarterly meeting of the Resource Advisory Council (RAC) meeting in Taos, N.M. on July 31, 1998, and the Gila Monster Interstate Watershed Management Program meeting on August 4, 1998. Additional meetings are currently being planned at three other locations around the state, utilizing local soil and water conservation districts as hosts. The importance of local leadership in the long term restoration of surface waters impacted by non-point source pollution cannot be over stated. These planned local meetings will serve to emphasize this point.

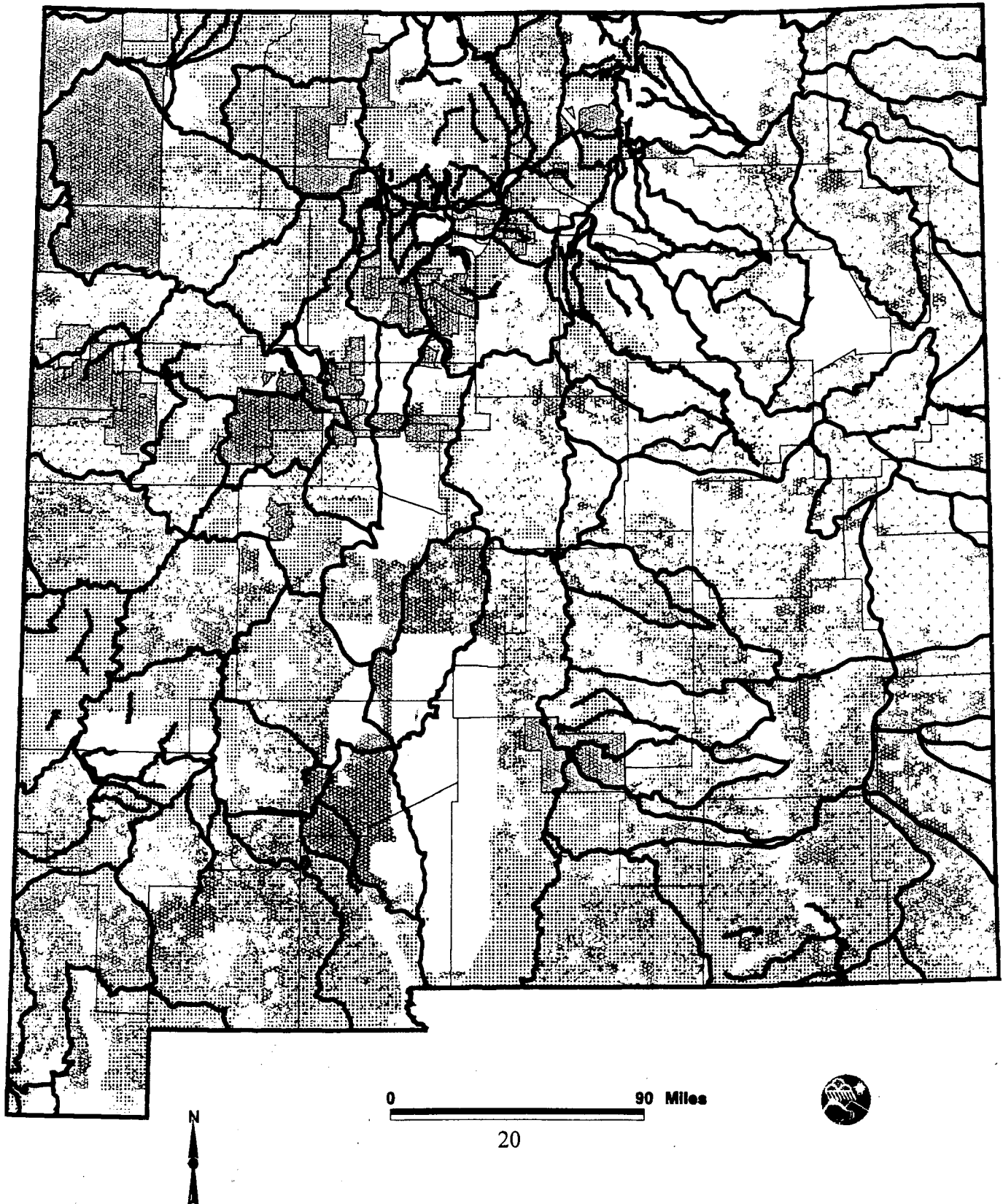
3.) Restoration Strategies

The GIS database developed as described above will be sorted on the priority surface water reaches within the 21 Category I watersheds to determine sources and causes of watershed and water quality impairment in those watersheds most in need of restoration. Restoration projects through 319(h) monies will be coordinated with other federal programs such as the USDA NRCS Environmental Quality Incentives Program (EQIP) and with both federal and state land management agency activities and proposals. The SWQB NPS Task Force in conjunction with other interested parties, will ensure that all jurisdictions and interested parties, including watershed associations, assist in the development of cooperative restoration plans and strategies and project proposals that will be designed to address the causes and sources of impairments.

An essential component of the restoration strategies and project proposals will be that measurable improvements take place. Therefore, best management practices will be implemented to specifically achieve clean water and other natural resource goals. Strategies and actions that

UWA

**Figure 5: Land Ownership Status
TMDLs within Category 1 Watersheds**



will achieve multiple environmental and public health benefits will be emphasized. It is essential that all land managers and interested land owners located within the priority Category I watersheds be involved in the development of restoration strategies, and even more importantly contribute their resources to the actual implementation of such projects. Figure 5 shows the variety of land ownership within the State of New Mexico where approximately 40% of the total land area of the state is under federal ownership.

Future Direction/Issues of the UWA in New Mexico

One of the unanimous conclusions of the UWA meeting participants is that the data provided on the tally sheet is insufficient to develop a comprehensive and valid watershed assessment for New Mexico. This is due, in part, to the short time-frame allowed for the development of this UWA. Many agencies and entities were unable to provide the information in the time frame given.

Other agencies seem unwilling or uninterested in providing information for the assessment. Some of this attitude can be attributed to the opinion that the CWAP and UWA are just another round of the same thing with the same goals and objectives that have been proposed or required through other venues. The uncertainty of funding also dampens the interest of participation of agencies who are already overloaded with responsibilities.

However, it is generally recognized that there is abundant relevant and current data available in New Mexico that can be found in federal, state, and local agencies and within other organizations that have been involved in assessing the state's rivers, riparian areas, wetlands, and watersheds. New Mexico is "data- rich" but "information- poor." One of the problems with this abundance of unused or unaccessed data is that it is incompatible. Another problem is that it is often duplicative. There is little consistency in the methodologies used by the various agencies that allows for an interchange and efficient utilization of data. Even within individual agencies this inconsistency is a problem. The USFS, for example, has gathered voluminous amounts of water quality, riparian, and watershed data in New Mexico over the years. However, the monitoring methodologies and protocols utilized are frequently changed so that data collected in the past is no longer available or is not comparable with data now being collected. Furthermore, neighboring USFS District Offices in the state often opt for different monitoring methodologies.

NMED SWQB has taken several actions during 1998 to improve its monitoring efforts. These changes will help assure the availability of scientifically valid and defensible data for efforts such as the UWA.

NMED SWQB has reorganized and redirected its surface water quality sampling efforts for physical parameters, metals, and nutrients so as to assure that all river reaches in the state are sampled every five years. On the chance that funding levels increase, the monitoring schedule will be accelerated.

Additionally, in order to address the issue of sedimentation, the SWQB is developing sediment assessment protocols for monitoring the deposition of sediment in surface waters of the state. This will be based on the narrative standard which is driven by the health of the stream bottom ecosystem taking into account the abundance and diversity of both the plant and animal communities. These protocols are designed to provide quantitative criteria to determine if a threshold of deposition has been reached and sediments are adversely impacting or significantly altering the physical or chemical properties and biological characteristics of the stream bottom. These investigations will incorporate the evaluation of numerous factors and will include such parameters as embeddedness, pebble counts, interstitial space index, benthic macroinvertebrate abundance and diversity estimates, electrofishing, Rosgen geomorphological stream assessment - levels II or III, watershed surface area, hydrography, stream bank stability, habitat assessment, and ecoregion identification. The development and application of these protocols will provide a much needed source of data that is essential in the monitoring of surface water quality and assessing river health and trends toward or away from stability.

SWQB, through a 319(h) grant is funding a study conducted by faculty of Northern Arizona University to create empirical predictive models for the field determination of bankfull stage and the erodibility of stream channel banks in New Mexico. Such work is currently underway in Arizona and parts of New Mexico through funding from the USFS. These field measurements will lead to the development of regional curves for hydro-physiographic provinces within the state and a bank erodibility hazard index (BEHI) for the arid southwest. The regional curves will relate channel maintenance discharge, cross-sectional area, channel width, and mean depth to drainage area within each province. The BEHI will be used to predict bank erosion, bank loss, and total volume of bank sediment carried downstream. The regional curves will be essential in implementing assessment of rivers using Rosgen's Level I through IV assessment methodologies, and the BEHI will be essential in focusing restoration efforts as it is estimated from studies that 50% of stream sediment comes from bank erosion.

It is anticipated that one of the outcomes of this UWA process will be the realization by participating agencies and entities, that when possible, data gathering methodologies should become consistent, comparable and defensible. A good example of such monitoring methodologies are the protocols developed by the Wildland Hydrology group which are a compilation of the proven and accepted methods of assessing streams. There are four levels of monitoring and assessment that allow for different levels of intensity to be applied dependent on the issues at hand or the skills and training of those monitoring. These protocols are accepted worldwide and, unlike many protocols now being touted, are defensible.

SWQB, in cooperation with other agencies, will continue to develop a watershed-based GIS project. One purpose of this project is to demonstrate the ability of a GIS to geographically inventory all environmental influences within a watershed. The resulting geospatial database will be compiled from a number of information sources and will be available in digital and map form. This effort will benefit all the participants involved in watershed management activities such as with land management, inventorying, environmental monitoring, problem identification,

prioritization, planning, permitting and other uses. It would allow agencies to integrate their management plans and strategies on a watershed basis. This is desirable as watersheds define a natural system that can be used to address environmental concerns.

Review of Public Comments

New Mexico Environment Department received five sets of written comments from:

- U.S. Environmental Protection Agency in coordination with the Regional Interagency Support Team (RIST) (which includes representatives from Arkansas, Louisiana, New Mexico, Oklahoma, and Texas) from:

- Corps of Engineers
- National Oceanic and Atmospheric Administration
- Bureau of Land Management
- Bureau of Indian Affairs
- Fish and Wildlife Service
- Forest Service (FS)
- U.S. Geological Survey
- U.S. Environmental Protection Agency
- Natural Resource Conservation Service
- U.S. Fish and Wildlife Service (USFWS)
- U.S. Forest Service (FS) Southwestern Region
- Pueblo of Zuni
- State of New Mexico Department of Agriculture (NMDA)

To provide the public with an opportunity to review a draft of the Unified Watershed Assessment a series of meetings was held throughout the state. Sign-in sheets from the public meetings are in Appendix 10. Fifteen comments were collected during the public review meetings. Public meetings were held on the following dates, locations, and had the following number of attendees:

- September 10, 1998 in Truth or Consequences (7)
- September 14, 1998 in Santa Fe (5)
- September 17, 1998 in Cuba (7)
- September 24, 1998 in Roswell (13)
- September 28, 1998 in Las Vegas (14)

All comments received are separated into the following four categories for discussion and response:

- Funding
- Data
- Participation and Cooperation
- Clarifications to the Draft

Funding

Funding issues were expressed in the public review meetings, from the RIST, and from NMDA. Setting funding priorities within the Category I watersheds was strongly encouraged by the RIST. This would include providing two sets of ranking for Category I watersheds, those to receive FY1999-00 funding and the remaining watersheds for future funding. Table 4, Watershed Restoration Priorities (page 16) does include a ranking of the Category I watersheds by restoration priority. However, SWQB does not at this time feel that it can adequately estimate the monetary need of each watershed or the potential new or incremental federal resources that will be provided for Category I watersheds. At this time, it is not practicable to separate the existing ranking into two sets. This may become useful at a later date.

A suggestion made during the public review meetings was to establish a process to build collaboration for projects in Category I watersheds, particularly in relation to Clean Water Act Section 319(h) funding. SWQB feels that coordinating efforts for projects throughout the state of New Mexico will greatly improve overall efforts to enhance water quality. One opportunity may include the offer in the RIST comments that the "USGS could collect additional data in category 4 watersheds and monitor water quality in category 1 watersheds." Another opportunity offered by the RIST may be the use of "USFWS Partners for Wildlife Program as a potential source of funds for wetland restoration projects." Efforts such as these can also be used to address another public comment on finding new money for Category IV Watershed assessments. SWQB is considering potential existing and new sources of federal and state resources that could be used for Category IV watershed assessment. This could include diverting existing funds that would have gone to projects in Category I watersheds that will be funded with new federal resources.

NMDA would "prefer to see studies initiated to determine *cause* of bank erosion" versus present studies for field determination of bankfull stage and the erodibility of stream channel banks in New Mexico. SWQB believes that the use of 319(h) funds to study of upland watershed functions, along with predictive tools such as bank erodibility hazard index is useful in overall watershed assessment.

SWQB appreciated a public comment that expressed the concern for providing funding on a program for education. Education is ultimately the key to making long-term improvements in water quality. U.S. EPA should provide targeted grant monies to achieve this.

Data

Existing Information

Many concerns were expressed throughout the comments on methodology for prioritizing watersheds. Both the FS and NMDA expressed the concern that no definitive criteria exist to prioritize existing data. NMDA points out that the data value judgements will tend to be

subjective. FS suggests “a total redevelopment of the Category I priority list based on values, risks, and opportunities. SWQB feels that these criteria, also highly subjective, will result in a similar, if not the same, prioritization of state watersheds. SWQB agrees with the NMDA comment that “greater local input, as suggested via the continued UWA endeavors, will prove advantageous to SWQB in identifying policy deficiencies, problem areas, and data gaps in improving the overall New Mexico water quality campaign.”

NMDA recommended in its comments that SWQB and NRCS exercise caution pertaining to the use of GIS technology. Instead, they contend that GIS should be secondary to solicitation at a local level. According to the RIST comments, “the State did a commendable job using data overlays to present various data layers and involvement of all interested groups.” SWQB and NRCS plan to continue the utilization of GIS technologies. We hope that we can make more existing data compatible with this format, while at the same time, gathering new data on the federal, state, and local levels.

Both USFWS and the FS commented that in simplifying the Category I watersheds, much of the information used to initially choose the watersheds (including mechanisms for assessing water quality; the triennial water quality review, water quality assessment report (305b) and remedial actions for water quality limited streams (319 program)) was overlooked. USFWS commented that the initial prioritization scheme for Category I was too simplistic and suggests that attempts should have been made to weight different segments making up a particular HUC. SWQB and NRCS feel that the “mechanisms for assessing water quality” were adequately represented in the decision making process and that the information and data those mechanisms provided, along with local input, were meaningful in the overall assessment and prioritization of the watersheds. The USFWS proposal to weight the segments does not seem realistic or practical given the magnitude of data and short time frame in which to pull together this information. SWQB and NRCS hope to work together in the future with USFWS to examine the development and implementation of a weighted system.

Additional Information

Additional information and support tools were offered in several of comment packages. These included using:

- USFWS National Wetlands Inventory maps
- Corps of Engineers information in specific watersheds
- existing plans or mandates for watershed restoration (specifically the Zuni Land Conservation Act of 1990 and the Zuni River Watershed Act of 1992)
- an integrated approach that considers the interaction of surface and ground waters where possible
- Considerations of the water yield and flood frequency, particularly 100-year storm events (USGS flow information)
- Consideration of recreational contributions to landscape degradation and forest fire

frequency

- Threatened and Endangered species information from the University of New Mexico
- Future investigation of failed septic systems and subsequent leaching associated with many suburban communities, as well as common points of migratory waterfowl and upland big game (elk) concentrations

- Investigations on: dead livestock in streams, solid wastes, canopy cover on forests, wilderness areas inputs, and adding lakes information

Options for enhancing data collection and agency involvement, as suggested in the comment of NMDA include:

- that "SWQB and NRCS establish a Memorandum of Understanding with the USFS, USFWS as well as other state and/or federal agencies"
- that "SWQB entertain a Freedom of Information Act request on behalf of suspected USFS monitoring data reserves in order to ascertain the existence of such data."

SWQB and NRCS hope to work cooperatively with all data holders to allow for the UWA to be continuously updated and improved. Updating the document may include additions to the existing list of Category I watersheds and/or the prioritization of the Category IV watersheds.

Participation and Coordination

Many of the comments complimented SWQB and NRCS for hard work and coordinated effort in producing the UWA under such pressing deadlines. However, the comments received from Forest Service did express that "outreach efforts for obtaining widespread comments on the draft document leave a lot to be desired." The comments of the Pueblo of Zuni express that they "would have appreciated more direct and timely invitation to participate in the process."

Although the document was not made available on the Internet, SWQB believes that the combination of widely distributing drafts along with advertized public review meetings was sufficient to provide opportunity for public comment and involvement in the UWA process. We hope that all future efforts are not subject to such pressing deadlines and can be carried out in a direct and timely manner. We also plan to continue to "publicize among limited resource communities/farmers to ensure that they have the opportunities to participate in restoration activities" as recommended by the RIST.

Two specific suggestions by the RIST were made in areas where participation and coordination could be improved. We agree with the RIST comment that interstate coordination will "strengthen and validate the regional and national picture of water quality." Since watersheds know no state boundaries we hope to examine this possibility in the future. As suggested by the RIST comments, we plan to continue "cooperation, discussion, and sharing of data" with tribes throughout this process. This UWA was developed with the involvement of several tribes and pueblos throughout New Mexico.

Clarifications to the Draft

As requested by the RIST we have classified each of our 8-digit HUCs into one of the four categories specified in the UWA framework. This information and accompanying map can be found in the executive summary of the document.

The USFWS provided very specific comments that we have incorporated into our final draft. These include:

1. providing an explanation in the text of the meaning of Roman numerals in parentheses in Table 2, Summary of Watershed Categories on page 13

The roman numerals were non-essential and were removed from the final draft.

2. adding Hydrologic Units 5, 7, and 31 (the three additional watersheds added for drinking water concerns) to Table 3 (and renaming) to Twenty-One Category 1 Watersheds.

The three HUCs were added to Table 3.

3. adding an additional table which cross-references individual segments as presented in the State of New Mexico §303(d) List for Assessed Stream and River Reaches, with USGS HUC codes.

This Table was added as Appendix 9.